REMARKS

Status of the Application

Prior to the entry of this amendment, claims 1-10 and 12 were pending in this application. In the Office Action, claims 1-4, 6-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,639,871 to Garotta ("Garotta"), claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 20030021184 to Zhang ("Zhang"), claims 1-3, 8-10 and 12 were rejected under 35 U.S.C. § 102(a) as being anticipated by International Patent Application No. WO 0131364 to Audebert ("Audebert") and claims 1-3 and 12 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,067,275 to Sayers ("Sayers").

The present amendment amends claims 1 and 12. Therefore, claims 1-10 and 12 are presented for examination in this amendment. No new matter is added by the amendments to claims 1 and 12 and support for the amendments may be found, *inter alia*, at ¶ 17 of the present application. Applicants respectfully request reconsideration of this application as amended.

Rejections under 35 U.S.C. § 102

In the Office Action, claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by Garotta, claims 1-10 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by Zhang, claims 1-3, 8-10 and 12 were rejected under 35 U.S.C. § 102(a) as being anticipated by Audebert and claims 1-3 and 12 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sayers. Reconsideration of these rejections is respectfully requested in light of the amendments to claims 1 and 12 and the following remarks.

Independent claims 1 and 12 of the present application describe a passive seismic monitoring system and method in which each independent claim contains the limitation of "calculating an estimated time of origin for the seismic or the microseismic event." Furthermore, as amended, independent claims 1 and 12 include the limitation that the time of arrival of the P or S wave at the sensor station is calculated without knowledge of the

location of the seismic or microseismic event, *i.e.* the passive nature of the seismic event is a limitation of the claims as amended.

The Garotta reference describes an active seismic processing method in which a seismic disturbance is generated at a known location and the results of the generated seismic disturbance are analyzed using knowledge of the location of the generated seismic event to interpret the geology of the subsoil. (*See, e.g.,* Garotta at Col. 2, ll. 47-53). Garotta does not disclose calculating time of arrival of the P or S wave at a sensor station without knowledge of the location of the seismic or microseismic event.

Zhang, like Garotta, describes an active seismic surveillance system in which seismic energy is imparted into the earth at a known location and traces of the reflections from the subsurface are recorded and analyzed based on knowledge of the location of the source of the seismic disturbance. (*See, e.g.*, Zhang Fig. 3 and at ¶¶6-8). As with Garotta, in the active seismic system of Zhang, the seismic energy is injected into the earth at a known location and this information is used in the data processing. Therefore, Zhang does not teach or suggest the limitation of calculating time of arrival of the P or S wave at a sensor station without knowledge of the location of the seismic or microseismic event.

Audebert, like Garotta and Zhang, discloses an active seismic method in which a seismic event is generated at a known location and the signal from the generated seismic event is detected and analyzed. (*See* Audebert, Abstract). Again, as with Garotta and Zhang, because Audebert is an active seismic method, the seismic event is a generated event that has a known location and time of occurrence. Consequently, as with Garotta and Zhang, the Audebert reference does not teach or disclose calculating time of arrival of the P or S wave at a sensor station is calculated without knowledge of the location of the seismic or microseismic event.

Finally, the Sayers reference, like Garotta, Audebert and Zhang teaches an active seismic surveying process in which a seismic source generates a seismic event at a known location and a signal received from the generated seismic event is analyzed using knowledge of the location of the generated seismic event. (*See, e.g.* Sayers Fig. 2 and at Col. 1, ll 49-57). As such, Sayers does not teach the passive seismic system of independent claims 1 and 12 of the present application in which time of arrival of the P or S wave at the sensor station is calculated without knowledge of the location of the seismic or microseismic event.

For the foregoing reasons, Applicants respectfully submit that none of the cited references teach or disclose all of the limitations of independent claims 1 and 12 of the present application. Consequently, Applicants respectfully request that the rejections of independent claims 1 and 12 and the claims depending from them be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

In the event that a fee or refund is due in connection with this Amendment, the Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No 19-0615. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (617) 768-2421.

Respectfully submitted,

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